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REMARKS

Applicant has carefully studied the outstanding Office Action. The present amendment is intended to be fully responsive to all points of rejection raised by the Examiner and is believed to place the application in condition for allowance. Favorable reconsideration and allowance of the application is respectfully requested.

Status of the Claims

Claims 1 – 3 and 5 - 36 remain in the application. Claim 10 has been amended to correct a typographical error. Applicants respectfully assert that the amendment to claim 10 does not add new matter.

Claim Objections

Claim 10 has been objected to for ending with a comma instead of with a period. Claim 10 has been amended to correct this typographical error, thus curing the objection.

Claims 5, 8, 25 – 30 and 32 have been objected to for being dependent from rejected independent claims.

35 USC 103 Rejections

The Examiner has rejected claims 1 – 3, 6, 7, 9 – 24, 31 and 33 - 36 under 35 U.S.C. 103(a) as being unpatentable over Abe et al. (U.S. Patent No. 5,903,854) in view of Meinzer (U.S. Patent No. 5,012,200). Applicants respectfully traverse these rejections in view of the remarks that follow.

Claims 1, 2, 22 and 23

Regarding claims 1, 2, 22 and 23, the Examiner stated that “Abe et al. (Fig. 9) disclose a transceiver circuit comprising: ... a transmission power amplifier (15) which is **broadly** read as an outphasing system”. Applicants strongly disagree with the Examiner’s reading of Abe et al.’s transmission power amplifier (15) as an outphasing system. Abe et al. neither teaches nor suggests that transmission power amplifier (15) is an outphasing system. Moreover, the example structures of the transmission power amplifier, shown in Figs. 11, 13, 14 and 16, do not comprise the basic components of an outphasing system as known in the art. Abe et al. even teaches against creating a phase difference between two branches of a signal, referring to this as “undesirable” (col. 16, lines 14 – 29).

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The Examiner also stated regarding Abe et al. "transmission power control information (S3) may be read as a first range of output power and a signal through bias controller (17) may be read as a second range of output power". Applicants strongly disagree with this statement. Abe et al. teaches "The bias controller 17 sets-up the bias of the transmission power amplifier 15 in response to the transmission power control information S3" (col. 7, lines 45 - 47). Therefore, it is incorrect to state that transmission power control information S3 refers to a first range of output power and the bias controller signal refers to a second range of output power, since the bias controller signal is in response to the transmission power control information S3. Moreover, Abe et al. neither teaches nor suggests that transmission power control information S3 is restricted to a first range of output power.

The Examiner stated regarding Meinzer that Fig. 4a discloses "'a Chireix transmitter' (col. 4, lines 53-60)". Applicants disagree with this statement. At col. 4, lines 60 - 65, Meinzer states that "The three channel system according to the invention", i.e. the system shown in Fig. 4a, "achieves an output power which is 1.5 times the output power obtainable ... in a Chireix transmitter". In other words, according to Meinzer, the three channel system shown in Fig. 4a is not a Chireix transmitter and obtains higher output power than a Chireix transmitter.

The Examiner also stated that "it would have been obvious in view of the references, taken as a whole, to have modified the transmission power amplifier (15) of Abe et al. to have included a Chireix, as taught by Meinzer. Such as modification would have increase the amplification efficiency and provide highly efficient linear amplifiers (see, col. 2, lines 56 - 65), thereby suggesting the obviousness of such a modification" (page 3, Office Action).

Applicants disagree with this conclusion. As mentioned above, Abe et al. teaches against creating a phase difference between two branches of a signal, referring to this as "undesirable" (col. 16, lines 14 - 29). Therefore, it is not obvious to modify the transmission power amplifier of Abe et al. to include a Chireix. Moreover, an obviousness rejection requires a teaching or a suggestion by the relied upon prior art of all the elements of a claim (MPEP 2142). In view of the previous remarks, the Examiner has failed to establish that Abe et al. and Meinzer, alone or in combination, teach or suggest all elements of independent

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claims 1 and 22. Accordingly, the Examiner has failed to establish a *prima facie* case of obviousness, and Applicants therefore respectfully request that the rejection of claims 1 and 22 under 35 USC 103(a) be withdrawn. Since claims 2 and 23 depend from claims 1 and 22, respectively, and include all the elements of these independent claims, the Examiner has failed to establish that Abe et al. and Meinzer, alone or in combination, teach or suggest all elements of dependent claims 2 and 23. Accordingly, the Examiner has failed to establish a *prima facie* case of obviousness, and Applicants therefore respectfully request that the rejection of claims 2 and 23 under 35 USC 103(a) be withdrawn.

Claims 3, 6 – 14, 24 and 36

Regarding claims 3, 10, 11, 13, 24 and 36, the Examiner stated that “the signal strength information (S1) from antenna (1) may be read as a desired output signal and instruction signal (S2) may be read as signal having threshold and power controller (16) for comparing the two signals (S1 and S2), and the difference of two signals ($S1 < S2$ or $S1 \geq S2$) will determine the proper control functions as designed choice, such as when ($S1 < S2$), controller (16) controls amplifiers (RF and IF) and when ($S1 \geq S2$) controller (16) controls power amplifier (15) which has been modified with a Chireix/outphasing system)” (page 4, Office Action).

Applicants strongly disagree with the Examiner’s statement. Firstly, it is incorrect to read the signal strength information (S1) from antenna (1) as “a desired output power”. The signal strength information S1 is a measure of the actual output power at the antenna, and is generally compared to the desired output power in order to determine whether changes need to be made.

Secondly, the Examiner’s suggestion that transmission power controller 16 compares the two signals and chooses a power control method based on the difference of the two signals is neither taught nor suggested by Abe et al. According to Abe et al., “transmission power control is carried out based on received signal strength level information S1 or an instruction signal S2 from a remote station such as a base station” (col. 7, lines 15 – 17). “The transmission power controller 16 generates and provides to the intermediate frequency variable gain amplifier 12 and the radio frequency variable gain amplifier 14 transmission

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power control information S3 based on an instruction from the controller 10” (col. 7, lines 22 – 26). “The transmission power controller 16 can also be constructed in such a manner as to generate and provide to the intermediate frequency variable gain amplifier 12 and the radio frequency variable gain amplifier 14 transmission power control information S3 using received signal strength level information S1” (col. 7, lines 31 – 36). In other words, the same power control method, namely providing the transmission power control information S3 to IF VGA 12 and RF VGA 14, is used for both the S1 signal and the S2 signal.

Therefore, Abe et al. does not teach or suggest “providing a first method of power control ... and providing a second method of power control”, as recited by claims 10, 11 and 13.” In particular, Abe et al. does not teach or suggest “varying the power of an input signal to a power amplifier when a desired output power is below a threshold”, as recited by claims 3 and 24. Also, Abe et al. does not teach or suggest “when a desired output power is below a threshold, ... reducing the power of an input signal to a power amplifier”, as recited by claim 36.

Applicants respectfully assert that it is not obvious to modify the transmission power amplifier of Abe et al. to include a Chireix/outphasing system, as suggested by the Examiner. As mentioned above, Abe et al. teaches against creating a phase difference between two branches of a signal, referring to this as “undesirable” (col. 16, lines 14 – 29). Moreover, an obviousness rejection requires a teaching or a suggestion by the relied upon prior art of all the elements of a claim (MPEP 2142). In view of the previous remarks, the Examiner has failed to establish that Abe et al. and Meinzer, alone or in combination, teach or suggest all elements of independent claims 3, 10, 11, 13, 24 and 36. Accordingly, the Examiner has failed to establish a *prima facie* case of obviousness, and Applicants therefore respectfully request that the rejection of claims 3, 10, 11, 13, 24 and 36 under 35 USC 103(a) be withdrawn. Since claims 6 – 9 depend from claim 36, claim 12 depends from claim 11 and claim 14 depends from claim 13, and include all the elements of these independent claims, the Examiner has failed to establish that Abe et al. and Meinzer, alone or in combination, teach or suggest all elements of dependent claims 6 – 9, 12 and 14. Accordingly, the Examiner has failed to establish a *prima facie* case of obviousness, and Applicants therefore respectfully request that the rejection of claims 6 – 9, 12 and 14 under 35 USC 103(a) be withdrawn.

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Claims 15 – 18, 31

Regarding claims 15 – 18 and 31, the remarks presented above with respect to Abe et al. and Meinzer are applicable here as well. In particular, Applicants respectfully assert that it is not obvious to modify the transmission power amplifier of Abe et al. to include a Chireix/outphasing system, as suggested by the Examiner. As mentioned above, Abe et al. teaches against creating a phase difference between two branches of a signal, referring to this as “undesirable” (col. 16, lines 14 – 29). Accordingly, the Examiner has failed to establish a *prima facie* case of obviousness, and Applicants therefore respectfully request that the rejection of claims 15, 17 and 31 under 35 USC 103(a) be withdrawn. Since claims 16 and 18 depend from independent claims 15 and 17, respectively, and include all the elements of these independent claims, the Examiner has failed to establish a *prima facie* case of obviousness for dependent claims 16 and 18, and Applicants therefore respectfully request that the rejection of claims 16 and 18 under 35 USC 103(a) be withdrawn.

Claims 19 – 21, 33 – 35

Regarding claims 19 – 21 and 33 – 35, the remarks presented above with respect to Abe et al. and Meinzer are applicable here as well. In particular, Applicants respectfully assert that it is not obvious to modify the transmission power amplifier of Abe et al. to include a Chireix/outphasing system, as suggested by the Examiner. As mentioned above, Abe et al. teaches against creating a phase difference between two branches of a signal, referring to this as “undesirable” (col. 16, lines 14 – 29). Accordingly, the Examiner has failed to establish a *prima facie* case of obviousness, and Applicants therefore respectfully request that the rejection of claims 19 and 33 under 35 USC 103(a) be withdrawn. Since claims 20 – 21 and 34 – 35 depend from independent claims 19 and 33, respectively, and include all the elements of these independent claims, the Examiner has failed to establish a *prima facie* case of obviousness for dependent claims 20 – 21 and 34 – 35, and Applicants therefore respectfully request that the rejection of claims 20 – 21 and 34 – 35 under 35 USC 103(a) be withdrawn.

Claim Objections

Applicants note the indication of allowable subject matter in claims 5, 8, 25 – 30 and 32. Claims 5, 8, 25 – 30 and 32 have been objected to as being dependent upon a rejected base claim. Claims 5 and 8 depend upon independent claim 36. Claims 25 – 30 depend upon

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independent claim 24. Claim 32 depends upon independent claim 31. Applicants respectfully assert that in view of the preceding comments, independent claims 36, 24 and 31 are in condition for allowance. Accordingly, Applicants respectfully request that the objections to claims 5, 8, 25 - 30 and 32 be withdrawn.

Should the Examiner have any question or comment as to the form, content or entry of this Amendment, the Examiner is requested to contact the undersigned at the telephone number below. Similarly, if there are any further issues yet to be resolved to advance the prosecution of this application to issue, the Examiner is requested to telephone the undersigned counsel.

In view of the foregoing amendments and remarks, the pending claims are deemed to be allowable. Their favorable reconsideration and allowance is respectfully requested.

Respectfully submitted,



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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Claims:

10. (Twice Amended) A method comprising:

providing a first method of power control in a radio frequency power amplifier for a desired output power at a first range of power values which is below a threshold; and

providing a second method of power control in said power amplifier for a desired output power at a second range of power values which is above or at said threshold[.].